



EPA Region 5 Records Ctr.



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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY****REGION 5****77 WEST JACKSON BOULEVARD****CHICAGO, IL 60604-3590****MEMORANDUM****DATE:** May 17, 2001**SUBJECT:** Review of the "Final" Supplemental Field Investigation/Risk Assessment Technical Memorandum, Himco Dump Superfund Site, Elkhart, Indiana**FROM:** Pat Van Leeuwen  
Toxicologist/Superfund**TO:** Gwen Massenburg  
Remedial Project Manager

I have reviewed the Supplemental Field Investigation/Risk Assessment Memorandum for the Himco Construction Debris Area (CDA), dated March 2001. The new organization of the document is good, and much more readable. I have a large number of comments, but most are pretty specific and only require simple corrections. I suggest that the contractors review these comments, and that we only discuss those specific comments that are not clear; that should save further time and money.

My comments on the document follow.

1) **Title Page.** The document is labeled "Final". All documents submitted by the US Army Corps of Engineers should be labeled "Draft" or "Draft Final" until approved by the EPA.

2) **Page ES-2, 2<sup>nd</sup> para, line 1.** To avoid confusion, it is better to use "greater than" rather than "above" when talking about risk levels. Also be consistent throughout the document. These concepts are confusing to the public.

3) **Page ES-3, 1st para.** I don't agree with the speculations presented in the second sentence. There are many reasons why the contaminant levels between two sampling rounds may differ .... including seasonal and meteorological changes. In addition, the new data from the 2000 sampling events, using lower detection limits, are more consistent with results from 1995; they show much higher

levels of contaminants than detected in 1998. Perhaps the 1998 laboratory analyses were not very good. In any case, these statements do not appear to be appropriate, given the date of this report and the additional data that is available.

4) **Page 1-2, 3<sup>rd</sup> bullet.** Same as # 2 above....."less than" is a better descriptor for risk than "below" in written documents.

5) **Page 2-2, Section 2.3.1, 1st para.** List which parcels were not sampled (N,T,R.and Q), and which were not assessed for risk.

6) **Page 2-5, Section 2.3.4 and Table 3-2.** The August 15, 2000 groundwater summary tables provided by ACE list other wells sampled in 1998 as WT101B and WT101C, but they are not listed in this report. Is there a reason?

7) **Page 3-3, Groundwater, 3<sup>rd</sup> para, last sentence.** Phthalates were detected at reasonably high levels in groundwater. Because the solid waste is in direct contact with the water table at the Himco Dump site, and many waste materials that were disposed-of at the dump could have contributed to detectable levels of phthalates in groundwater, I am not certain why it would be "extremely doubtful" for these compounds to be associated with the Himco site. Phthalates are frequently found in groundwater near waste sites and landfills. Risk estimates for phthalates are reported in the ES. What am I missing here?

8) **Page 3-3, Ground water, last para, last sentence.** Arsenic is reported in 5 well locations at 6 concentration levels, "respectively". What is missing? Is one of the samples a duplicate? Which?

9) **Page 3-5, 1<sup>st</sup> para, last sentence.** What "reporting limits" are referred to here?

10) **Page 3-5, Ground water, 2<sup>nd</sup> para.** The benzene concentration in well WT116A is reported as 14 µg/l here and in Table 3-3, and 15 µg/l on page 2-3. Some consistency would be good.

11) **Page 4-2, last bullet.** So are the metal estimates conservative if the preservative was not adequate? There would be a potential for adsorbance of metals to the glass. Is this a point to make in the uncertainty tables and conclusions?

12) **Page 5-4.** A sentence relating the last two paragraphs to what is being considered at this site and in the CSM would put the rather generic discussion provided in this section in context.

13) **Page 5-6, Section 5.3.3.2.** It would seem relevant to state that although the residents are currently on a municipal water supply, private wells are still in place and *could* be used as a drinking water source.

14) **Page 5-10, Section 5.4.2.3.** What Region 9 screening table was used in this assessment? I think that the Region 9 1999 PRG values were updated for this report.....the beginning of the 2000 table lists the changes and these were incorporated here (e.g., the 2000 manganese value was used). The reference implies that the 1999 values were used through-out..

15) **Page 5-11, Section 5.4.2.4, Lead.** I do not agree that the detection of 695 ppm lead in a

soil sample in parcel F does not represent a site-related occurrence or a potential risk to a resident who may live at this location. In my comments of April 17, 2000 on Section 6.6.1, number 4, I stated "Because the soil lead concentration of 695 mg/kg is an estimate of the concentration in total soil, not the fine fraction that sticks to hands and is transported into the indoor environment, the risk estimate based on this value may well be an underestimate. The text seems to imply that this lead concentration does not present a concern, without any further discussion of the issue. Is there a risk to children from lead exposure? Where is this discussion?" I still do not see a discussion of *why* 695 mg/kg x 1.4 (the enrichment values implied by ACE) .....or approximately 1000 ppm of lead in soil ..... does not present a risk to a child residing on the parcel, or to a worker as well (adult screening level is 750 ppm, as per Adult Lead guidance). While I do not believe that this detection requires a full blown lead risk assessment, the potential for lead exposure should be discussed in the context of the EPA position and guidance on lead. Also if remedial action is planned for the CDA area, no further sampling would be required.....unless there is some evidence to suggest that the lead would not pass the leachability test for soluble lead.

It is also not clear why the value of 695 ppm has a "J" qualifier; the detection limit for lead in soil is usually about 50 ppm. And the lead is most certainly related to the debris in the CDA area; the deeper sample at this location also shows the presence of lead. Other shallow soils in the area also have lead hits, though again the fine fraction was not analyzed. The concern over lead in this waste was one of the primary reasons why EPA pursued sampling of the CDA soil in the first place.

16) **Page 5-15, Section 5.5.2.1, 2<sup>nd</sup> para.** Is it reasonable to assume that the CDA will have good vegetative cover? It is unlikely that this area will have grass, so this explanation does not sound very credible.

17) **Page 5-26, Section 5.6.1.5.** The age-adjusted water contact factor does not include the ET term. This differs for the showering adult and bathing child. Correct the equation, reported factor value and risk estimate. Hopefully, this is just a typo and the calculations are correct.

18) **Page 5-29, Section 5.6.1.6.** Same as above. The ET factor was omitted in the age-adjusted equation. Correct the equation and calculated values....and risk estimate?

19) All equation presentations should use consistent subscript notation.....eg., "child" vs "wc" or "sc", etc. This is confusing to the reader as presented.

20) **Page 5-30, Section 5.6.2.1.** a) The equation for the age-adjusted skin contact with ground water is given twice.....here and in Section 5.6.1.5. The second presentation of the equation is not needed; the description of the inputs is sufficient. One way to handle these discussions would be to label the equations and then refer to the equations used to derive the age-adjusted values described in this section; an alternate way is to refer to the section in which the age-adjusted equation is first presented.

21) **Page 5-31, Section 5.6.2.1.** Give the exposure time for the bathing child in the ground water contact discussion and any other pertinent comments.

22) **Page 5-31, Section 5.6.2.3.** a) What is the basis for the selection of 188 days/year for the construction activity? I did not see a discussion of the rationale for this choice. The values selected must not be arbitrary. b) Explain how the hourly respiratory rate was derived. Is there a reason for using an hourly rate rather than the worker default inhalation rate for an eight-hour work day? Usually the hourly rate is only used if an adjustment to the default is considered appropriate.

23) **Page 5-34, Section 5.8.3, general comment.** The estimated risks in this section should be consistently reported in the various sections and tables. It only confuses the reader when the reported values are shown as different estimates (eg, 2E-04 when total risk is 2.5E-04, and 2E-05 for surface soil when the risk is actually 2.6E-05). If two significant digits are to be reported for the carcinogenic risks (my preference), they should be consistently used. Also both the text description of risk and the numerical value should be reported for every risk. This whole section should be reviewed and corrected.

24) **Page 5-34, Section 5.8.3.1, 1<sup>st</sup> para.** The adult resident total risk shown in parentheses should be 2.5E-04, not 2E-04.

25) **Page 5-34, Section 5.8.3.1, 4<sup>th</sup> para.** The reported total risk from soil exposure of 3E-05 does not match the two entries which follow (2E-05 from surface soil and 4E-06 from gardening); the Table 5-11 surface soil value is actually 2.6E-05. Be consistent.

26) **Page 5-35, Section 5.8.3.2, 1<sup>st</sup> para.** EPA has previously commented that it is NOT appropriate to develop a non-carcinogenic risk estimate for a adult/child receptor by combining the ground water inhalation estimate for the adult with the remaining media estimates for a child. This cannot be a conservative estimate, as stated in the text, because the 12 minute shower to a 70 kg adult provides approximate half an order of magnitude less exposure than a 45 minute bath to a 15 kg child, especially when used with RfC values, which allow no adjustment for inhalation rate. However, in Table 5-8 and on page 5-31, 2<sup>nd</sup> para., it is suggested that the same inhalation rate (0.6 m<sup>3</sup>/hr) is used for both the showering adult and bathing child; the text also suggests that the total volatilization concentration is also the same. In both scenarios receptors are exposed to whole-house air concentrations from indoor water use. The non-carcinogenic child risk estimates are thus inappropriate as presented here and remain unacceptable to EPA. They must be corrected in all parcel evaluations.

27) **Page 5-35, Section 5.8.3.3.** The comments regarding consistent reporting also apply to the Parcel O risk estimates. Report two significant digits from tables consistently; do not round twice. In this section, both the total risk of 2.56 E-04 and the soil risk of 3.23E-05 are reported with a numerical value of 3! The gardening soil risk is reported to 2 significant digits, while the surface soil risk is reported to 1 significant digit.

28) **Page 5-36, Section 5.8.3.4.** Correct the ground water inhalation estimate as described above in comment # 26.

29) **Page 5-37, Section 5.8.3.5.** Why was the 0-2 ft fraction used to represent exposure to surface soil? A statement about the uncertainty in assuming that the 0-2 ft soil concentration represents a normal child direct-contact depth, as well as in assuming soil concentrations in this parcel are similar to those on other residential lots is needed. The construction debris material is not homogeneous.

30) **Page 5-38, Section 5.8.3.6.** The comments regarding consistent reporting also apply to the Parcel N risk estimates. Report two significant digits from tables consistently

31) **Page 5-38, Section 5.8.3.7.** Correct the ground water inhalation estimate as described above.

32) **Page 5-38/39, Section 5.8.3.8.** The comments regarding consistent reporting also apply to

the Parcel P risk estimates. Report two significant digits from tables consistently. The values reported do not make sense.

33) **Page 5-39, Section 5.8.3.9.** Correct the ground water inhalation estimate as described above.

34) **Page 5-40, Section 5.8.3.10.** The comments regarding consistent reporting also apply to the Parcel S risk estimates. Report two significant digits from tables consistently.

35) **Page 5-41, Section 5.8.3.11.** Correct the ground water inhalation estimate as described above.

36) **Page 5-41/42, Section 5.8.3.12.** The comments regarding consistent reporting also apply to the Parcel F risk estimates. Report two significant digits from tables consistently.

37) **Page 5-42, Section 5.8.3.13.** Correct the ground water inhalation estimate as described above.

38) **Page 5-43, Section 5.8.3.14.** The comments regarding consistent reporting also apply to the Parcel D risk estimates. Report two significant digits from tables consistently. The numbers don't add up as reported.

39) **Page 5-44, Section 5.8.3.15.** Correct the ground water inhalation estimate as described above.

40) **Sections 5.8.3.16/5.8.3.17/5.8.3.18/5.8.3.19.** a) A clarification should be added to these discussions ....indicating that these well locations do not presently impact any current residents and were not used in the development of risk estimates for the residential Parcels. b) Report two significant digits from tables consistently. c) Correct the ground water inhalation HI estimate as described above.

41) **Sections 5.8.3.20/5.8.3.21.** a) Indicate in the text that this well pair was used for all current/future residential Parcel evaluations. b) Report two significant digits from tables consistently.

42) **Page 4-48, Section 5.8.3.21, Adult/Child Resident.** a) EPA NCEA does not support an RfD for benzene; thus the basis of the non-carcinogenic blood HI estimate is uncertain. Provide information on how this was derived. b) What is meant by "Similarly, antimony's mean concentration of 32 ug/L is also comparable to 2X the mean background concentration of 17.6 ug/L"? Why is this similar to thallium, for which a comparison of means is shown. Why is 2X the background concentration used for comparison for antimony?. c) Correct the ground water inhalation HI estimate as described above.

43) **Page 5-49, Section 5.10, 1<sup>st</sup> para.** Add that Parcel N is uncharacterized, as no soil samples were available.

44) **Page 5-49, Section 5.10, 2<sup>nd</sup> para.** This discussion is not complete and thus is not acceptable to EPA as a final conclusion. a) EPA does not separate out risks by individual media when determining the need for further action to protect human health and the environment. The total risk from

all media exposures should be derived to support the ROD decision. In addition, the soil risks ....some nearly 10<sup>-4</sup> (Parcel S soil risk is reported as 10<sup>-4</sup> in Section 5.8.3.10!)....heavily contribute to the total residential risk. EPA guidance does identify the individual residential unit as the appropriate risk unit for the land use scenarios evaluated here, and that is how the risk estimates should be reported. b) EPA does not use the risk range in the manner suggested here, and strongly discourages the use of such statements. EPA does have a point of departure for risk (10<sup>-6</sup>) and a risk range for total risk which is used to negotiate clean-up levels, primarily because it is not always possible to detect some contaminants at the 10<sup>-6</sup> concentration level, much less cleanup some contaminants to this level. EPA also has a trigger risk level of 10<sup>-4</sup>; total site risks....not individual media or pathway risks.....may not exceed 10<sup>-4</sup>. This section **MUST** be rewritten. Some comments from EPA Headquarters have been provided in a separate attachment.

45) **Page 5-49, Section 5.10, 3<sup>rd</sup> para.** State that there is uncertainty in the soil lead hazard as samples were not sieved, and thus do not represent the exposure concentration of lead. The values likely provide an under-estimation of lead risk to children in Parcels....list those where lead was found and Parcel N (not-sampled).

46) **Page 5-49, Section 5.10, Addition.** Recap the comments from 5-7 (or maybe 6.0) in an additional section here, even though the indoor vapor migration pathway was not quantitatively assessed. Given the isopleth maps and these statements, it appears that soil vapor concentrations could contribute to risk to the residents in the Parcels evaluated. This area.....the CDA and the Parcels is the subject of this assessment, so the concentrations for this area shown in the isopleth maps must be described in this section in some form. Also, while the soil vapor maps are referred to in Section 3.1.3, page 3-5, this is early in the document; they should be referred to again here.

47) **Page 6-1, Section 6.0, 1<sup>st</sup> para.** Caveat the lead soil statement; the soil was not sieved.

48) **Page 6-1, Section 6.0, 2<sup>nd</sup> para.** See earlier comments about phthalates in landfills.

49) **Section 6.0.** See above comments about pathway or media risks, and include as appropriate in these bullets. In addition, add bullets that present the total (all chemical, all pathway) risk estimates for each residential Parcel and each identified receptor; this is the bottom-line of this assessment. Include uncertainty about the contribution of indoor vapor migration given the soil gas isopleths.

50) **General** Modify the comments about the "acceptable" risk range; this does not accurately reflect the EPA policy. Site actions can be taken to address risks at any level in the risk range; this is determined by the certainty (or uncertainty) in the data, the ability to cleanup to a more protective level, the cost, and a number of other factors. The 10<sup>-4</sup> level is not a pre-determined decision point, as suggested in this document.

## Tables

51) **Table 3-2.** The well location for the first entry is missing. What well is this.....101A?